NE7 Page 5, between lines 10 and 11, insert the heading -- SUMMARY OF THE INVENTION --.

NE7 Page 7, delete lines 29-32.

NE7 Page 7, before line 33, insert the heading -- BRIEF DESCRIPTION OF THE DRAWINGS --.

NE7 Page 8, between lines 3 and 4, insert the heading -- DESCRIPTION OF PREFERRED EMBODIMENTS --.

IN THE CLAIMS:

Please amend Claims 1-8 as follows:

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-- 1 (Amended). A digital equalization method for estimating discrete information symbols [(d_k) of a transmitted signal] from digital samples [(y_k)] of a signal received over a transmission channel represented by a finite impulse response of W+1 coefficients [($r_0, r_1, \ldots, r_W$)], W being an integer greater than 1, comprising the steps of:

- **determining [the] W roots [($\alpha_1, \alpha_2, \ldots, \alpha_W$)] in the complex plane of the Z-transform [($R(Z)$)] of the impulse response;**
- **distributing the W roots into a first set of W-p roots [($\alpha_1, \ldots, \alpha_{W-p}$)] and a second set of p roots [($\alpha_{W-p+1}, \ldots, \alpha_W$)], p being an integer greater than 0**

and smaller than W, the roots of the second set being closer to the unit circle than those of the first set according to a determined distance criterion in the complex plane;

- obtaining an intermediate signal [(Y')] by applying a first equalization method to the received signal [(Y)] based on a finite impulse response [whose] having a Z-transform [$(R^S(Z))$, formed by] consisting of a polynomial of degree W-p in Z^{-1}, [has] having roots [which are] equal to the W-p roots of the first set; and
- obtaining estimations [$(\hat{d}_k)$] of the discrete information symbols [of the transmitted signal] by applying a second equalization method to the intermediate signal based on a finite impulse response [whose] having a Z-transform [$(R^I(Z))$, formed by] consisting of a polynomial of degree p in Z^{-1}, [has] having roots [which are] equal to the p roots of the second set.

2 (Amended). A method according to claim 1, wherein the first equalization method yields the intermediate signal in the form of a vector Y' of n+p samples [$(y'_1, \ldots, y'_{n+p})$] obtained according to the relation :

$$Y' = (A'^H A')^{-1} A'^H Y$$

where n is an integer representing a frame size, Y is a vector composed of n+W samples [(y_k)] of the received signal, and A' is a matrix with n+W rows and n+p columns having a Toeplitz structure formed from the coefficients [(s_q)] of said polynomial of degree W-p in Z^{-1} [$(R^S(Z))$].

3 (Amended). A method according to claim 1 [or 2], wherein the second equalization method comprises implementing a Viterbi algorithm.

4 (Amended). A method according to [any one of claims 1 to 3] claim 1, wherein the unit circle distance criterion, used to distribute the W roots $\alpha_1, \ldots, \alpha_W$ of the Z-transform [(R(Z))] of the channel impulse response into the first and second sets, is expressed as a distance δ_q of the form $\delta_q = 1 - |\alpha_q|$ if $|\alpha_q| \le 1$, and of the form $\delta_q = 1 - 1/|\alpha_q|$ if $|\alpha_q| > 1$, for $1 \le q \le W$.

5 (Amended). A radio communications receiver comprising:

- conversion means [(1,3,4)] to produce digital samples [(y_k)] from a radio signal received over a transmission channel represented by a finite impulse response of W+1 coefficients [($r_0, r_1, \ldots, r_W$)], W being an integer greater than 1;
- means [(6)] for measuring the channel impulse response;
- means for calculating [the] W roots [($\alpha_1, \alpha_2, \ldots, \alpha_W$)] in the complex plane of the Z-transform [(R(Z))] of the impulse response;
- means for distributing the W roots into a first set of W-p roots [($\alpha_1, \ldots, \alpha_{W-p}$)] and a second set of p roots [($\alpha_{W-p+1}, \ldots, \alpha_W$)], p being an integer greater than 0 and smaller than W, the roots of the second set being closer to the unit circle than those of the first set according to a determined distance criterion in the complex plane;

- a first equalization stage for producing an intermediate signal by applying a first equalization method to the received signal [(y_k)] based on a finite impulse response [whose] <u>having a</u> Z-transform [$(R^S(Z))$, formed by] <u>consisting of</u> a polynomial of degree W-p in Z^{-1}, [has] <u>having</u> roots [which are] <u>equal to</u> the W-p roots of the first set; and
- a second equalization stage for producing estimations [$(\hat{d}_k)$] of the discrete symbols of a signal carried on the channel by applying a second equalization method to the intermediate signal based on a finite impulse response [whose] <u>having a</u> Z-transform [$(R^I(Z))$, formed by] <u>consisting of</u> a polynomial of degree p in Z^{-1}, [has] <u>having</u> roots [which are] <u>equal to</u> the p roots of the second set.

6 (Amended). A receiver according to claim 5, wherein the first equalization stage is arranged to yield the intermediate signal in the form of a vector Y′ of n+p samples [$(y'_1,...,y'_{n+p})$] obtained according to the relation:

$$Y' = (A'^H A')^{-1} A'^H Y$$

where <u>n is an integer representing a frame size,</u> Y is a vector composed of n+W samples [(y_k)] of the received signal, and A′ is a matrix with n+W rows and n+p columns having a Toeplitz structure formed from the coefficients [(s_q)] of said polynomial of degree W-p in Z^{-1} [$(R^S(Z))$].

7 (Amended). A receiver according to claim 5 [or 6], wherein the second equalization stage is arranged to implement a Viterbi algorithm.

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8 (Amended). A receiver according to [any one of claims 5 to 7] claim 5, wherein the means for distributing the W roots into the first and second sets make use of a unit circle distance criterion expressed as a distance δ_q of the form $\delta_q = 1 - |\alpha_q|$ if $|\alpha_q| \leq 1$, and of the form $\delta_q = 1 - 1/|\alpha_q|$ if $|\alpha_q| > 1$, for $1 \leq q \leq W$. --